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RISK SCORES AND BIOMARKERS FOR THE PREDICTION OF 1-YEAR OUTCOME AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Poster Contributions
Poster Hall B1
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Background: Transcatheter aortic valve replacement (TAVR) leads to substantial reductions in mortality and morbidity in patients with severe aortic stenosis at high perioperative risk. Up to 50 percent of these individuals still die or have to be rehospitalized during the first year after the procedure. This emphasizes the need for more strategic patient selection. The aim of our study was to compare the prognostic performance of 4 risk scores (logistic EuroSCORE, EuroSCORE II, STS-PROM, German Aortic Valve score) and 5 circulating biomarkers of inflammation and/or myocardial dysfunction (hsCRP, GDF-15, IL-6, IL-8, NTproBNP), alone and in combination, to predict all-cause mortality and major adverse cardiac events (MACE, all-cause mortality or rehospitalization) in the first year after TAVR.

Methods: We calculated the hazard ratios and c-statistics (AUC) of risk scores and biomarkers for 1-year all-cause mortality (N=80) or MACE (N=132) in 310 consecutive TAVR patients. The magnitude of the increase in model performance when combining risk scores and biomarkers was evaluated by the change in the c-statistic (ΔAUC), integrated discrimination improvement (IDI), and continuous net reclassification improvement [NRI(>0)].

Results: The EuroSCORE II and GDF-15 had the strongest predictive value for 1-year mortality (EuroSCORE II, AUC 0.711; GDF-15, AUC 0.686) and MACE (EuroSCORE II, 0.690; GDF-15, 0.682). When added to the EuroSCORE II, GDF-15, and to a lesser extent IL-8, enhanced the prognostic performance of the score and enabled substantial reclassification of patients. Combinations of increasing tertiles of the EuroSCORE II and GDF15 identified patient subgroups with mortality rates ranging from 8.5 to 49.1% and MACE rates ranging from 15.3 to 68.4%. NT-proBNP did not add prognostic information to the EuroSCORE II.

Conclusion: Our study identified the EuroSCORE II and GDF-15, alone and in combination, as the most promising predictors of a poor outcome after TAVR. Risk score/biomarker combinations may support the decision making process in patients considered for TAVR.